This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A spread spectrum communications system, comprising:

(A) a transmitter, said transmitter further comprising:

(1) a data source;

(2) a first mixer spreading data from said data source with a first pseudo noise source (PNA);

(3) a second mixer spreading data from said first mixer with a second pseudo noise source (PNB);

(4) an RF transmitter;

(B) a receiver, said receiver further comprising:

(1) an RF receiver;

~~(2) a plurality of frequency shifters, receiving a signal from said RF receiver;~~

[[(3)]] (2) at least one ~~a plurality of~~ PNB matched filter[[s]] receiving signals from said RF receiver ~~and said plurality of frequency shifters~~;

[[(4)]] (3) a plurality of frequency shifters, receiving a signal from said ~~plurality of~~ at least one PNB matched filter[[s]];

[[(5)]] (4) a plurality of PNA matched filters receiving data from said ~~plurality of~~ at least one PNB matched filter[[s]] and said plurality of frequency shifters; and

[[(6)]] (5) an equalizer/decoder receiving signals from said plurality of PNA matched filters.

2. (Original) A spread spectrum communications system, as recited in claim 1, wherein said PNA pseudo noise source provides a variable length code sequence.

3. (Original) A spread spectrum communications system, as recited in claim 1, wherein said PNB pseudo noise source provides a fixed length code sequence.

4. (Original) A spread spectrum communications system, as recited in claim 1, wherein said first mixer/multiplier spreads said data from said data source with a variable PN code PNA.

5. (Original) A spread spectrum communications system, as recited in claim 1, wherein said second mixer/multiplier spreads said data from said first mixer with a fixed length PN code PNB.

6. (Original) A spread spectrum communications system, as recited in claim 1, wherein said PNB matched filter further comprises a set of coefficients correlated to said PNB pseudo noise source.

7. (Original) A spread spectrum communications system, as recited in claim 1, wherein said plurality of frequency shifters are offset from each other by one or more degrees.

8. (Original) A spread spectrum communications system, as recited in claim 1, wherein said PNA matched filters are correlated to said PNA pseudo noise source.

9. (Original) A spread spectrum communications system, as recited in claim 1, wherein said PNB matched filters are correlated to said PNB pseudo noise source.

10. (Original) A spread spectrum communications system, as recited in claim 1, wherein said equalizer/decoder selects an advantageous signal from said received signals from said plurality of PNA matched filters.

11. (Currently Amended) A spread spectrum communications system, as recited in claim 1, wherein said equalizer/decoder performs the steps consisting of:

(A) initializing an update magnitude;

(B) forming a complex equalization point;

(C) scaling and rotating said equalization point into position;

(D) forming a decision boundary to decode bits;

(E) generating an output bit along with an[[d]] error vector normalized to the origin; and

(F) updating angle and magnitude parameters for the next bit.